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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,619	09/29/2004	Silvia Marabini	2546-1005	7780

7590 03/28/2008
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EXAMINER

CHONG, DAVID W

ART UNIT	PAPER NUMBER
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4151

MAIL DATE	DELIVERY MODE
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03/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,619	Applicant(s) MARABINI ET AL.	
	Examiner DAVID CHONG	Art Unit 4151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-11 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/12/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 3 is objected to because of the following informalities: Claim 3 depends of claim 2 which was cancelled. Claim 3 was taken to depend on claim 1 for the remainder of the action. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Regarding claims 1 and 6, the phrase "particularly" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 6-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Squicciarini (US 2003/0021731).

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6. For claim 6, Squicciarini teaches an analyzer for analyzing residual solvents and automatically determining its content (0013 lines 1-2) capable of extracting acetaldehyde from PET and automatically determining its content, which comprises; a desorption cell into which said sample is inserted (0027 line 3); means for scavenging said desorption cell with air (fitting 24 which can be a cylinder with air used for scavenging, 0047 line 3); means for incubating and heating a sample placed in the cell (0028 line 2); means for pressurizing the cell (0037); an analyzer-system comprising a separation column (0040) capable of being optimized for acetaldehyde separation; a loop connectable to said cell (0051) capable of receiving an aeriform acetaldehyde sample and transmitting it to an optimized separation column and then to a detector; a complex of controlled valve-means (automatic valve assembly 0040) capable of manipulating the fluids flowing within the analyzer.

7. For claim 7, Squicciarini teaches a processing and control unit (0038) which is capable of controlling the valve means.

8. For claim 8, Squicciarini teaches a means for measuring the partial pressure (0049 lines 6-8) during a cycle (during desorption step).

9. For claim 9, Squicciarini teaches that the cell is provided with a perforable baffle (pierceable septum, 0042 lines 4-5) capable of being injected with a mixture of known acetaldehyde concentration for calibration purpose.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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13. Claims 1, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squicciarini (US 2003/0021731) in view of Andrews et al. (WO 01/02489) and Treece et al. (US 5,968,429).

14. For claim 1, Squicciarini teaches a method for extracting and analyzing residual solvents in the sample in which the sample is located to the desorption cell (0051). Squicciarini does not teach that the sample is a PET sample. Andrews teaches a mixture of PET and a second polymer which exhibits a lower acetaldehyde content than PET alone (see Abstract). Acetaldehyde concentration was measured using a thermal desorption GC-MS (p. 6). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the invention of Squicciarini to analyze PET samples for acetaldehyde content since it provides a desorption cell capable of being heated, i.e. a thermal desorption cell that could separate acetaldehyde from PET.

15. For claim 1, Squicciarini teaches washing or scavenging said desorption cell with a carrier gas (0048), incubating and heating the sample placed in the cell (0057, line 7), pressurizing the cell (0052 lines 1-2), charging a loop (filling the loop, 0053, lines 1-2), and transferring the loop content to a gas chromatography column (0054, lines 1-2) and from there to the detector (0054 line 4). Squicciarini does not specifically teach that the cell is washed with air. Treece et al. teach a method for removing acetaldehyde from PET polymers (col. 4 lines 41-44) which can use dehumidified air (col. 7 line 4). At the time of the invention it would have been obvious to a person of ordinary skill in the art to utilize air to scavenge or wash any residual acetaldehyde in the cell since air

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would dissolve any acetaldehyde present in the cell (Treece, col. 7 line 5) which would rid the system of any acetaldehyde not from the sample.

16. For claim 4, the teaching of Squicciarini/Andrews/Treece are specific, i.e. optimized for acetaldehyde separation.

17. For claim 5, Squicciarini teaches an analysis cycle (0045 line 1) in which the cell scavenging with air would commence after removal of the sample.

18. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Squicciarini (US 2003/0021731) in view of Andrews et al. (WO 01/02489) and Treece et al. (US 5,968,429) further in view of Jerman et al. (US 4,471,647).

19. For claim 3, Squicciarini/Andrews/Treece teaches the elements of claim 1. They do not teach that the loop content is transferred by a transport gas such as hydrogen. Squicciarini teaches using a carrier gas to the capillary column (0048 line 4) but does not teach that it is hydrogen. Jerman teaches a gas chromatography system, detector and method in which a hydrogen carrier gas is used (col. 4 lines 64-66). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a standard carrier gas such as hydrogen as a carrier gas because of its sensitivity over other carrier gases.

20. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Squicciarini (US 2003/0021731) in view of Takaoka et al. (US 2002/0017192).

21. For claim 10, Squicciarini teaches the elements of claim 8 and that the cell is connected to a cylinder source for supplying a reference standard (0047 line 3). They do not teach that the reference standard is an acetaldehyde/nitrogen mixture of a known concentration. Takaoka teaches a gas adsorbent used to

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adsorb acetaldehyde (0029 line 6). A nitrogen gas base acetaldehyde standard was used (0037 lines 1-4) to accurately measure changes acetaldehyde concentration. At the time of the invention it would have been obvious to person of ordinary skill in the art to utilize an acetaldehyde standard as taught in Takaoka into the teaching of Squicciarini in order to analyze content of acetaldehyde samples.

22. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Squicciarini (US 2003/0021731) in view of Wegeng et al. (US 2003/0015093).

23. For claim 11, Squicciarini teaches the elements of claim 6 and a heating means but does not teach that it is an electrically controlled heating means.

Wegeng teaches a gas adsorption and desorption apparatus (0010 lines 1-2) in which an electrically resistive heater can be used (0010 line 16) for the thermal enhancement of PSA (pressure swing adsorption). At the time of the invention it would have been obvious to use an electrical controlled heating means so that a greater amount of desorbing species can be desorbed (Wegeng, 0019 lines 8-11) which would extract more of the solvent to be measured (Squicciarini, 0028 lines 2-3)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID CHONG whose telephone number is (571)270-3718. The examiner can normally be reached on Monday through Friday, 7:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on 571-272-1303. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DC.

/Michael Kornakov/

Supervisory Patent Examiner, Art Unit 4151